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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,194	11/17/2003	Radislav Alexandrovich Potyrailo	RD26349-3	9351

41838 7590 11/01/2007  
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EXAMINER
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GAKH, YELENA G

ART UNIT	PAPER NUMBER
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1797

MAIL DATE	DELIVERY MODE
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11/01/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/714,194	POTYRAILO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Yelena G. Gakh, Ph.D.	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 25-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 25-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. RCE and amendment filed on 09/14/07 are acknowledged. Claims 25-50 are pending in the application.

#### ***Response to Amendment***

2. The examiner modifies rejections in light of the amendment.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 25-50 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The pending claims recite a method for determining a spatial distribution of at least one chemical species in a surrounding medium by placing a capillary filled with a liquid comprising a reagent for the species into the location with suspected analytes, allowing the species to diffuse through the walls of the capillary to react with the reagent in the liquid, transferring the content of the capillary to a detector to detect the reaction products and to determine the length of travel time for the region of the liquid containing the reaction products to reach detector, which therefore will allow to determine the spatial distribution of the chemical species in the surrounding medium by correlating it with the reagent product distribution in the capillary.

While the principles of the method are clear, the disclosure misses important information essential for performing the method. The only experimental parameter related to the movement of the reaction products in the fluid in the capillary is the time of their detection. It is clear for any person of an ordinary skill in the art that it is impossible to determine the length of travel time for the region of the fluid medium, as required by the method of claim 25, if the start time of moving the region is not known. If the start time for moving the region is exactly the same as

the time of applying the force to the fluid in the capillary, this should have been clearly stated in the specification. Furthermore, there is no way to relate the time of traveling of each region to the spatial distribution of the reagents in the capillary (and hence chemical species in the surrounding media), if the speed of flow in the capillary is not known. No indication for measuring this essential parameter is provided in the specification. Moreover, it is important to note that even if the distribution of the species could have been established (with all the indicated parameters defined), there is no way to determine exact location of the species in the surrounding medium, since there is no reference point for determining this location.

It is further not clear, whether the diffusion of the reagent products within the capillary occurs during permeation of the species into the capillary (with the fluid being stationary in the capillary). Also, with a plurality of various detectors recited in claim 26 it does not seem feasible to evaluate the time from eluting the reaction products from the capillary to the time of their detection, which would be different for "optical, spectroscopic, electrochemical, gravimetric, and mass spectrometric" detectors. (Optical and mass spectrometric detectors belong to spectroscopic detectors).

Therefore, the disclosure of the specification does not appear to be sufficient for enabling the method recited in the pending claims.

#### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 25-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The preamble of the method recited in claim 25 is confusing, since the methods of detecting the presence, determining the spatial distribution, and quantifying the amount of at least one chemical species in a surrounding media are different methods and require different experimental set-up. It appears from the body of the claim that it is the method for determining the spatial distribution of at least one species, which is recited in the claims. In step (8) the

region of the fluid medium contains not the chemical species, which are supposed to be determined as it follows from the preamble of the claim, but rather their reaction products with the reagent in the fluid medium.

The same problems exist for claim 29.

In claim 26 two members of the Markush group, optical and mass spectrometric methods, belong to the third member of the Markush group, i.e. spectroscopic methods; thus the spectroscopic methods should be further defined in the claim in order to discern them from optical spectroscopy and mass spectrometry.

### ***Response to Arguments***

6. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yelena G. Gakh, Ph.D. whose telephone number is (571) 272-1257. The examiner can normally be reached on 9:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

10/26/2007

  
**YELENA GAKH**  
**PRIMARY EXAMINER**